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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,674	09/18/2003	Nobuyuki Ito	CU-3362	8247

7590 03/11/2005
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EXAMINER

CLEVELAND, MICHAEL B

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/666,674

Applicant(s)

ITO, NOBUYUKI

Examiner

Michael Cleveland

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
4a) Of the above claim(s) 4-14 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3 and 15 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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DETAILED ACTION

Election/Restrictions

1. Claims 4-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 9/17/2004.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 is unclear because it does not state what is controlled to a constant temperature by cooling during the printing process on the heated substrate. Based on the claim, it appears the claim is at least inclusive of controlling the temperature of the ink to a constant temperature.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyashita et al. (WO98/24271, hereafter '271. U.S. Patent Application Publication 2003/0054186 is used as translation) in view of Pham et al. (U.S Patent 2002/0127344, hereafter '344).

'271 teaches a method of manufacturing an organic EL display by an ink jet method, wherein a uniform organic EL layer is formed by a process of discharge-placing on a substrate, at least an organic material in the form of solution [0010, 0050].

'271 does not explicitly teach drying the ink by depositing it on a heated substrate. However, it is extremely well known in the art of solution coating that the drying of a layer may

be accelerated by heating the substrate. See, for instance, '344 [0006]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have deposited the solution of '271 on a heated substrate in order to have increased productivity by reducing the amount of time needed to dry the substrate.

Claim 3: '271 teaches the production of a 2-D array of pixels (Figs. 8, 13). The Examiner takes Official Notice that it is common to move an ink-jet nozzle and substrate relative to one another when providing a pattern, and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have done so to ink-jet print the pixels of '271.

6. Claims 2 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyashita '271. in view of Pham '344, as applied to claim 1, and further in view of Drake (U.S. Patent 5,017,941, hereafter '941).

'271 and '344 are discussed above, but do not explicitly teach controlling the ink to a constant temperature by cooling. However, it is well known in the art of ink-jet printing to maintain a constant temperature of the ink by cooling the ink-jet head to avoid disruption of the printing properties. See, e.g., '941, col. 1, lines 22-27 and col. 2, lines 52-57. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have cooled the ink-jet ink to have maintained a constant temperature during the printing of '271 in order to have maintained a constant temperatures and to have avoided changing the printing properties.

Response to Arguments

7. Applicant's arguments filed 1/31/2005 have been fully considered but they are not persuasive.

Applicant argues that the amendment to claim 2 clarifies the claim. The argument is unconvincing because claim 2 does not state what is controlled to a constant temperature. "Control" in the sense used in claim 2 is transitive, and therefore requires a direct object.

Applicant argues that heating of the substrate is not ordinarily carried out because problems may occur such as those described by the Drake reference. The argument is

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unconvincing because it is unsupported by evidence, because the statement that heating of the substrate is not ordinarily carried out is a concession that it sometimes is carried out, and because it does not address the combination of references, specifically the speed advantage for evaporating the solvent for an applied ink taught by Pham.

Insofar as Applicant appears to argue unexpected results in the ability to control the ink by cooling the printhead while heating the substrate, the argument is unconvincing because the results are not unexpected because such control is taught by Drake.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (571) 272-1418. The examiner can normally be reached on Monday-Thursday, 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Cleveland

Primary Examiner

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3/8/2005